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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,628	04/04/2007	Yasuhiro Shindo	65656 (49227)	1973

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EDWARDS ANGELL PALMER & DODGE LLP  
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BOSTON, MA 02205

EXAMINER
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FINK, BRIEANN R

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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04/28/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/582,628	<b>Applicant(s)</b> SHINDO ET AL.	
	<b>Examiner</b> Brieann R. Fink	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6,16,17 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) 23-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-6, and 16-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This office action follows a reply filed on February 5, 2010. Claims 1, 4-6, 16-17 have been amended. Claims 23-25 have been added; however, are withdrawn as being drawn to a nonelected invention. Claims 1-2, 4-6, and 16-17 are currently pending and under examination.
2. The rejection of claims 1, 4, and 16-17 under 35 U.S.C. 102(b) as being anticipated by *Moller et al.* (US 6,159,556) is withdrawn.
3. The rejection of claims 1-2, 4-6, and 16-17 under 35 U.S.C. 102(b) as being anticipated by *Furuta et al.* (US 2003/0220444) is maintained.
4. Further, some new rejections are applied below in view of the newly amended claims.
5. The texts of those sections of Title 35 U.S. Code are not included in this section and can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 102***

6. Claims 1-2, 4, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by *Kinsho* (US 2003/0125479).

*Kinsho* discloses an aqueous dispersion prepared by mixing together the following:

[dispersion 1], which is prepared by mixing

[a microfine powder dispersion slurry A1] which comprises reacting styrenated phenol-polyethylene oxide adduct, bisphenol A diglycidyl ether, and ethylenediamine (Production Example 1, p. 17, [0311])

and [water-soluble polymer T1] which comprises reacting polycaprolactonediol, polyetherdiol, hexamethylene diisocyanate (HDI), and hydrogenated methylene diphenyl diisocyanate (MDI) (Production Example 4, p. 18, [0317]). (Production Example 4, p. 18, [0318]).

[prepolymer 1]: dehydrogenate polycaprolactonediol and reacting with isophorone diisocyanate (IPDI) (Production Example 8, p. 18, [0322])

and

[curing agent]: ethylenediamine and methyl isobutyl ketone (MIBK) (Production Example 9, p. 18, [0323]).

Prepolymer 1 appears to be the same as applicants (A), dispersion 1 appears to be the same as applicants' (B) and the curing agent is that of (a2).

As to claim 16, *Kinsho* discloses filtering the dispersion to collect the resin particles (p. 19, [0325]).

### ***Claim Rejections - 35 USC § 103***

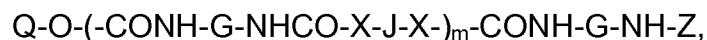
7. Claims 1-2, 4-6, and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Furuta et al.* (US 2003/0220444).

*Furuta et al.* teaches a water-dispersed slurry coating, comprising: (A) a particulate comprising (a1) a resin having an active hydrogen; (B) a reactive surfactant having at least one of an optionally blocked isocyanate group and an epoxy group; and (M) an aqueous medium in which (A) and (B) are contained (p. 1, [0010]). The surfactant (B) is further taught as comprising a hydrophobic moiety and a hydrophilic moiety (p. 1, [0013]).

Further, *Furuta et al.* teaches the surfactant (B) as a urethane resin having at least one of an optionally blocked isocyanate group and an epoxy group comprising: (b3) an addition reaction product of (b1) a monohydric phenol or a monohydric aromatic alcohol, at least one of (b2) a vinyl monomer having an optionally blocked isocyanate group and (b2') a vinyl monomer having an epoxy group and may be used in combination with (b9) a vinyl monomer, such as styrene, or an alkylene oxide adduct of the addition reaction product; (b4) an organic diisocyanate; and (b5) at least one of a diol and a diamine each having a polyoxyalkylene chain; and optionally a chain terminating agent (p. 2, [0028]).

*Furuta et al.* further teaches the chain terminating agent to include compounds such as ethanol, propanol, and butanol (p. 4, [0069]), which are the same as the blocking agents of the instant invention (see instant specification, p. 10, I. 2).

*Furuta et al.* discloses a preferable urethane resin as



where Q represents a residue of (b3), G represents a residue of (b4), X represents O or NH, J represents a residue of (b5), Z represents a group

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represented by  $-\text{CO}-\text{Y}$ , wherein  $\text{Y}$  is  $-\text{OR}'$ , wherein  $\text{R}'$  is a monohydric alcohol residue, which is the same as the alcohol blocking agent of the instant invention, and  $m$  is an integer between 1 and 500.

The reactive surfactant (B) taught by *Furuta et al.* falls within that claimed by the instant invention; however, the integer  $m$  of 1-500 is much larger than the claimed range of 1-20 and the ranges are overlapping. It has been held that overlapping ranges are sufficient to establish *prima facie* obviousness. See MPEP 2144.05.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected from the overlapping portion of the range taught by the reference because overlapping ranges have been held to establish *prima facie* obviousness.

As to claim 2, *Furuta et al.* teaches the slurry coating to preferably contain a curing agent (a2) (p. 6, [0098]).

As to claim 4, *Furuta et al.* teaches the hydrophobic moiety as having an aromatic ring-containing hydrocarbon group having 6 to 10 carbon atoms (p. 1, [0013]).

As to claim 5, *Furuta et al.* teaches the hydrophilic group of the surfactant as an oxyethylene unit, such as polyoxyethylene moiety, such that the content of oxyethylene unit is from 20-90% by weight of the surfactant (B) (p. 1, [0016]-[0017]).

As to claim 6, *Furuta et al.* teaches all of the surfactants in Synthesis Examples 1-8 to have an average molecular weight of between 5,800 and 33,000 (p. 14-15); however, fails to teach the weight average molecular weight of the polyoxyethylene chain. The components of the surfactant and reaction conditions to produce the surfactant of *Furuta et al.* appear to be the same as that of the instant invention, therefore, the weight average molecular weight of the polyoxyethylene chain of *Furuta et al.* is inherently the same as that required by the instant invention.

As to claim 16, *Furuta et al.* teaches that the particulate (A0) can be obtained by a process in which a solvent solution of the resin (a1) is disperse into water and desolvation of the solvent is carried out (p. 6, [0099]).

As to claim 17, *Furuta et al.* teaches applying the dispersion to an object and baking the coating to form a film on the object (p. 13, [0239]).

### ***Response to Arguments***

8. Applicant's arguments filed February 5, 2010 have been fully considered but they are not persuasive.

Applicants argue that the claimed moiety designated as Q does not include any of the optionally blocked isocyanate group and epoxy.

The examiner disagrees, as Q is claimed as a residue of (b3), and lines 11-12 of claim 1 recites "an isocyanate group which may be blocked or an epoxy group is added to said (b3)". Further, as far as the hydrophilicity of the groups of

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the surfactant, it is unclear from the claims which group is hydrophilic and which is hydrophobic because applicant's arguments contradict the claimed invention.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. US 5,043,381 discloses aqueous dispersions of a nonionic water dispersible polyurethane having pendent polyoxyethylene chains.
- b. US 5,387,367 discloses nonaqueous polyisocyanate formulations.
- c. US 5,977,398 discloses a viscosity modifier prepared by the reaction of styrenated phenol EO adduct and dodecyl phenol EO and HDMI used in acrylic emulsions.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the



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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Briann R. Fink whose telephone number is (571)270-7344. The examiner can normally be reached on Monday through Friday, 7:00 AM to 4:30 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton I. Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Milton I. Cano/  
Supervisory Patent Examiner, Art Unit 1796

/Briann R Fink/  
Examiner, Art Unit 1796

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